

Exhibit 1

Foster Transcript Excerpts

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

SCANSOFT, INC.,

Plaintiff,

v.

C.A. No. 04-10353-PBS

VOICE SIGNAL

TECHNOLOGIES, INC.,

LAURENCE S. GILLICK,

ROBERT S. ROTH,

JONATHAN P. YAMRON,

and MANFRED G. GRABHERR,

Defendants.

DEPOSITION OF PETER J. FOSTER, a witness called
by and on behalf of the Defendants, taken pursuant to
the applicable provisions of the Federal Rules of
Civil Procedure, before Dana Ulrich Welch, CSR,
Registered Professional Reporter, and Notary Public,
in and for the Commonwealth of Massachusetts, at the
offices of Choate, Hall & Stewart, 53 State Street,
Boston, Massachusetts, commencing at 10:13 a.m.

Job No.: 2196

ORIGINAL

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7

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8

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1 I N D E X

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WITNESS: PETER J. FOSTER PAGE NO.

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By Ms. Columbia 4

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5 Certificate of the Reporter 148

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9 E X H I B I T S

10 NO. DESCRIPTION PAGE NO.

11

12 1 - Patent No. 5,297,183 18

13 2 - Patent No. 5,659,597 18

14 3 - Patent No. 6,501,966 B1 18

15 4 - Patent No. 6,157,848 18

16 5 - Uniden Voice Dial Operating Guide 44

17 6 - Dr. Helms Article Speech Tech '86 57

18 7 - Amendment to License Agreement

19 with Cover Letter 1/13/05 88

20 8 - Subpoena 89

21 9 - 5/28/04 Letter re: Assignment Document 102

22 10 - VCS Article 9/15/98 113

23

24

1 P R O C E E D I N G S

2 (The Texas driver's license number as
3 identification of the deponent was noted for the
4 record.)

5 WHEREUPON,

6 PETER J. FOSTER,

7 having duly sworn or affirmed that his testimony
8 would be the truth, the whole truth, and nothing but
9 the truth, testified as follows:

10 DIRECT EXAMINATION

11 BY MS. COLUMBIA:

12 Q. Good morning, Mr. Foster. My name is Sarah
13 Columbia. I'm here with my colleague, Paul Bonanno.
14 We represent Voice Systems Technology in a lawsuit
15 between Voice Systems Technologies and ScanSoft.
16 Are you familiar generally with that lawsuit or the
17 fact of that lawsuit?

18 A. Fact of that lawsuit.

19 Q. Have you ever had your deposition taken
20 before, sir?

21 A. Yes.

22 Q. Was it in a commercial litigation context;
23 that is, a lawsuit between businesses or some other
24 context?

1 Control Systems. Is it fair, based upon your
2 testimony, that other than during the time you were
3 at Voice Control Systems, you were not involved
4 professionally with speech recognition technology?

5 A. No. Because of Philips, but --

6 Q. Quite right. Because there's a stretch at
7 the end of Voice Control Systems when you were at
8 Philips Speech.

9 So if I change my question to say other
10 than the stretch from 1985 through the end of 2000,
11 that included both Voice Control Systems and Philips
12 Speech Systems, that with the exception of those
13 years, your professional involvement did not involve
14 speech recognition technology?

15 A. That's right.

16 Q. Were you one of the founders of Voice
17 Control Systems?

18 A. No.

19 Q. When was Voice Control Systems founded; do
20 you know?

21 A. No.

22 Q. What caused you to go to work there?

23 A. A business acquaintance through the U.S.
24 Tel period made an investment in the company and

1 recruited me to run the company.

2 Q. And so what was your job there or what were
3 your jobs over the period of time with Voice Control
4 Systems?

5 A. CEO or an equivalent. When I first joined
6 the company, it was a partnership.

7 Q. Okay. And roughly what was the size of the
8 company when you first joined in 1985?

9 A. 17 people, give or take.

10 Q. Was Mr. Schalk already with Voice Control
11 Systems when you joined in 1985?

12 A. Dr. Schalk was there.

13 Q. Pardon me. Dr. Schalk. And is it Mr.
14 Bareis or Dr. Bareis or Bareis?

15 A. At the time, it was Mr. Bareis.

16 Q. Okay.

17 A. I'm not sure at this stage. He may have
18 gotten his -- I don't remember.

19 Q. Okay. Was he at the company when you
20 joined?

21 A. No.

22 Q. When did he come on board?

23 A. I don't remember.

24 Q. And describe for me, if you would, and

1 please, if it changed over time, tell me how it
2 changed, what your responsibilities and role were at
3 Voice Control Systems from 1985 through 1999?

4 A. That's a hard question.

5 Q. Well, we can break it down, if that's
6 easier.

7 A. Well, in this way. In a small company, as
8 CEO, I was responsible for everything from turning
9 the lights on in the morning to making the coffee,
10 you know, to the partnership agreements.

11 Q. Uh-huh.

12 A. But in general, I was responsible for the
13 strategy of the company; funding the company; making
14 payroll; managing the board; I mean, literally soup
15 to nuts. And in that sense, it didn't change, even
16 during my entire tenure.

17 Q. Okay. When you first joined, was there a
18 board?

19 A. Again, it was a partnership.

20 Q. Okay.

21 A. But we had a group of people that
22 functioned as a board because the intent was to
23 become -- you know, to incorporate.

24 Q. Yes.

1 dialing in a wireless environment.

2 Q. What was your contribution to the overall
3 invention, understanding that it had many
4 subinventions to it.

5 A. I don't remember the whole -- I'm sure
6 there's various aspects of it. But remembering that
7 this was, you know, 13, 15 years ago. Starting with
8 let's go after this market. Determining the
9 requirements; you know, in advance of the invention.
10 In other words, what are you trying to do. A lot of
11 the human factors; a lot of the telecommunications
12 strategy and overall systems design; the testing,
13 some of the testing for it; what are the -- maybe
14 that's requirements. But you know, when is it
15 successful; when is it not successful.

16 Boy, just little bits and pieces. Things
17 as simple as timers; where does one set timers. I
18 had a lot of experience in telecommunications and so
19 brought that expertise to the situation, a lot of
20 experience with phones and switching systems.

21 So I mean, the three of us were, it wasn't
22 you just do this and you just do this and me just do
23 that. I mean, we had primaries. Tom, Dr. Schalk
24 was primarily responsible for the speech

1 recognition, but he also contributed heavily and in
2 some cases lead to the -- lead contributor to the
3 human factors. Mr. Bareis also had switching
4 experience from a previous career and
5 telecommunications experience and he was primarily
6 in the hardware development.

7 But we would meet and collaborate on -- on,
8 you know, as a committee on most -- on where these
9 things came together. And actually, critiqued is
10 probably too strong a word, but looked for holes in
11 the areas where someone else had the prime
12 responsibility. So it was a pretty good
13 collaboration.

14 Q. Okay. When did Mr. Bareis join the
15 company?

16 A. I don't remember.

17 Q. I may have asked you that.

18 A. After me.

19 Q. Sorry.

20 A. Yeah.

21 Q. When approximately did the three of you
22 begin this collaborative process which resulted in
23 the invention that's described in this family of
24 patents?

1 A. I don't really remember.

2 Q. Do you remember if I -- the first patent
3 application was filed in April of 1992. Can you
4 tell me, we started two years before that, five
5 years before that? I assume it's a number of years
6 to develop this technology, but I may be wrong.

7 A. Yeah, this invention -- let me answer it
8 this way: We got together with patent counsel and
9 learned about patents because none of us were
10 experts in it. And had to go through, jump through
11 some steps with the patent attorney to determine
12 what inventions were not accomplished prior or, you
13 know, too early in the process. I don't even
14 remember how long that was. I think it was a year.
15 I might be wrong.

16 But we went through things like we had to
17 produce marketing documents to show him of all our
18 products and -- maybe not all of them, but anything
19 relevant, you know, so that we could sort of bound
20 this and determine where we could start with the
21 invention.

22 It was my opinion we had patentable
23 technology of other ilks, other inventions, let's
24 say, that we chose not to patent earlier. So

1 there's this continuum of what we're doing.

2 But it centers around the inventions that
3 we made that went into the McCaw cellular voice
4 dialing system; that was the trigger that caused us
5 to say, well, this stuff is now getting out. That
6 was a commercial product, you know, something that
7 the average person I think would think is
8 commercial. We sold it. They put it into general
9 use among their wireless customers in Dallas, Texas.

10 Q. Okay.

11 A. So we, you know, we thought we'd patent it.
12 We went back and looked at any number of inventions
13 that we had, figured out the ones that were possible
14 or let's say, the aspects of this that were possible
15 to protect with patent, with a patent law and dealt
16 with those in these patents. And the core of it is,
17 you know, voice dialing in this wireless
18 environment.

19 Q. Okay. And the patent counsel that you
20 referred to, was that Mr. Judson at the time?

21 A. David Judson, yes.

22 Q. Putting aside -- we'll get back to the
23 materials you've collected up for your patent
24 counsel. So putting those aside and focusing

1 instead on the collaborative work that you did in
2 advance of that to develop the invention itself,
3 were there lab notebooks or meeting notes or
4 engineering notes or anything of that sort created
5 contemporaneous with that work?

6 A. You know, I just don't remember. I didn't.
7 But my personality is such that I don't like to
8 write a lot of stuff down. I'm more of a sales guy,
9 in that aspect of things. So I don't remember any.

10 Q. Okay.

11 A. And I know I didn't do anything, for sure.

12 Q. Okay. One of the things you said when I
13 asked what your role was in the development of the
14 inventions that are described in this family of
15 patents was that you -- I'm trying to think how you
16 said it. So I may not use the right words, but that
17 you were responsible for sort of seeing this market
18 opportunity or seeing it as a market that Voice
19 Control Systems wanted to try to be in. Is that
20 fair?

21 A. Yes.

22 Q. And I take it from your earlier testimony,
23 you would have been the guy who approved putting
24 resources into developing this technology, correct?

1 and VCS, part. I had to help them figure out how
2 much they would charge because they didn't know much
3 about the development side.

4 Q. Gotcha. Okay.

5 A. So we worked very closely. It was in our
6 best interest for them to be successful. They were
7 -- I think they were the only distributor we had.
8 I'm almost certain. And -- does it have a picture?

9 Q. There's a picture on the front cover of the
10 unit.

11 A. Oh, yeah, okay. Good. This voice dialer
12 was this piece in the middle here.

13 Q. Okay. Could you do me a favor, Mr. Foster,
14 since this is not very visual, just put a circle
15 with this blue pen on Exhibit 5 around the piece
16 that you just described as being the voice dialer.

17 A. It's hard to see because of the xerox, but
18 generally in the middle.

19 Q. Could you just write "voice dialer" there?

20 A. Okay (indicating).

21 Q. And do you know, did Uniden, in fact,
22 purchase the voice dialer from the combination of
23 By-Word and Voice Control Systems?

24 A. When you say purchase, that's broad.

1 Q. Okay.

2 A. I mean, our technology was in it. I don't
3 remember what they bought from whom.

4 Q. How did you get paid?

5 A. That's the part I don't remember. Yeah, I
6 don't remember. I don't know if it was a broad
7 license, a per unit license. I don't even know. We
8 could have built the hardware. I just don't
9 remember.

10 Q. Okay. Do you remember whether Uniden then
11 marketed and sold this product that's reflected on
12 the front page of Exhibit 5?

13 A. Yes, they did.

14 Q. Okay. Do you remember approximately when
15 Uniden, when this product was complete and when
16 Uniden began to offer it to the marketplace?

17 A. No.

18 Q. Do you remember what year?

19 A. No.

20 Q. Were you involved -- I think you said you
21 were involved in arbitrating the specifications.
22 What does that mean?

23 A. Uniden's expectations were in excess of
24 what could be delivered.

1 Q. So these were the front end specifications
2 for agreeing ahead of time what it was that the
3 combined By-Word/Voice Control Systems entity was
4 going to deliver?

5 A. That's correct.

6 Q. Did you have any involvement in reviewing
7 or commenting on this operating guide for the Uniden
8 phone which is Exhibit 5?

9 A. I don't remember.

10 Q. Did you have any involvement in testing the
11 Uniden phone that's shown in Exhibit 5?

12 A. Again, I don't -- I don't remember.

13 Q. Did you buy one or have one in your car?

14 A. No.

15 Q. Do you know if anybody at Voice Control
16 Systems had one?

17 A. I don't remember.

18 Q. Okay. Did Voice Control Systems develop a
19 voice dialer for any other development manufacturer,
20 that is, the type of voice dialer that would be
21 compatible with a cell phone along the lines of
22 what's shown in Exhibit 5?

23 A. You got to break that down into parts.

24 Q. Okay. Well, let me start with the broad

1 and, you know.

2 Q. We're glad you're here today.

3 A. Well, I couldn't miss the cold. I needed a
4 change, you know.

5 Q. This is actually, we're having a heat wave
6 today.

7 A. Yeah, I heard that. Tonight we're going to
8 get back to normal.

9 Q. When you went to visit with Bill Opet at
10 McCaw --

11 A. Well, at MetroCell.

12 Q. At MetroCell. Pardon me.

13 A. No. It's all --

14 Q. I got it. Was anybody in the industry at
15 that time, to your knowledge, were any of the
16 cellular companies offering voice recognition as a
17 service?

18 A. Oh, god, no. No one thought you could do
19 it.

20 Q. So this was something new that you were
21 presenting to him. Okay.

22 A. Even some of us didn't think we could do
23 it, especially those that had to do it.

24 Q. Okay.

1 A. But I had confidence they could.

2 Q. So the concept you were selling to McCaw
3 was that this would be voice recognition service
4 that would not be in the customer's handset but
5 rather be at some location --

6 A. Right.

7 Q. -- that was managed by MetroCell or McCaw
8 or somebody on their behalf?

9 A. Right.

10 Q. That would handle the voice recognition and
11 dialing features --

12 A. Right.

13 Q. -- that people need to be able to --

14 A. Accomplish it.

15 Q. -- accomplish it?

16 A. Yes.

17 Q. As of that time, had Voice Control Systems
18 built something that could do that or --

19 A. I think --

20 Q. -- or were you looking --

21 A. I think I was a little out in front of it
22 myself. We sure were looking for that up front
23 development money.

24 Q. I take it you made a deal somewhere along

1 the way with MetroCell or McCaw?

2 A. Yeah.

3 Q. Tell me what that deal was.

4 A. Again, I don't remember the specifics.

5 Q. Okay.

6 A. I think there was an up front number. And
7 we agreed to develop an intelligent peripheral was
8 the term of art, in other words, a box that sat next
9 to the switch.

10 Q. Next to the cellular service providers'
11 switch?

12 A. Wireless, yes. To accomplish voice
13 dialing.

14 Q. Okay. And if I heard you correctly, there
15 was some up front money to do --

16 A. I think so. I sure hope.

17 Q. -- to do some development work?

18 A. Yeah..

19 Q. And then after that, was it a license
20 agreement?

21 A. No. We supplied boxes. I mean, the
22 agreement was, the thought was that we would supply
23 boxes.

24 Q. Okay. And did you, in fact, supply boxes

1 to MetroCell?

2 A. We supplied a box. And then as it became
3 more apparent that it was going to be successful,
4 they felt they needed a company with more substance
5 to service them; they couldn't be dependent on a
6 very small, techy company; so we partnered with
7 Brite Voice Systems and the subsequent boxes were
8 built by Brite Voice Systems.

9 Q. So you supplied the first box?

10 A. Yeah.

11 Q. Okay. And was that a box that actually sat
12 next to a real live MetroCell switch?

13 A. Yes.

14 Q. And performed voice recognition and voice
15 dialing?

16 A. Yes.

17 Q. Do you remember when you supplied that
18 first box?

19 A. No. Sometime before, you know, just before
20 they started offering the service; but I don't
21 remember the exact dates.

22 Q. Okay. And then when you changed the
23 structure of the agreement to work with Brite Voice
24 Systems, did you then license the technology and

1 Brite Voice built the boxes?

2 A. Yes. Well, again, technology is a broad
3 word. Brite had -- Brite's business was building
4 these intelligent peripherals. And they had looked
5 at speech recognition, as one of their customers
6 were banks and that was a place, you know, put in
7 your account number, enter your account number by
8 voice for people with rotary phones. So they really
9 had all that technology. And again, without
10 knowing, they might just have licensed from us the
11 application.

12 Q. Okay.

13 A. Oh, and the speech algorithms. But
14 technology being the broad word, if we shrink it
15 down to, I would say that they licensed at least the
16 voice dialing application and all that that entails,
17 the voice dialing application technology.

18 Q. Okay.

19 A. I don't know that they -- there was some --
20 they used boards that we built. But they were using
21 those before for the banking. And that went through
22 another, you know, circuitous route to get to them.
23 And they licensed -- we had some kind of royalty
24 arrangement that circumvented the normal thing and

1 it was all rolled together.

2 But specifically they licensed the voice
3 dialing technology and they paid us a lot of money
4 up front for that as I recall.

5 Q. Brite?

6 A. Brite did, yeah. Hundreds of thousands.
7 And they paid us an ongoing royalty for what
8 essentially became this patent. And as memory
9 serves me, the patent hadn't issued yet. And so I
10 don't remember how it was worded, but it had to be
11 worded very carefully to protect us in either case;
12 well, what if it issues, well, what if it doesn't
13 issue.

14 Q. The agreement itself?

15 A. Yeah. But it was clearly this technology.
16 I mean, we told them we had a patent application
17 pending and, you know, they had to put something, if
18 it's granted, then blah, blah, blah; if not, then,
19 blah, blah, blah.

20 Q. Did you share with them the patent
21 application as your description of the technology?

22 A. No. I don't think we were supposed to do
23 that until after the thing was granted.

24 Q. Based on your memory then, did the license

1 MR. ASHER: Okay. Go ahead.

2 THE DEPONENT: She was telling me that, you
3 know, I was going, you know, I was -- had some
4 obligation to participate because of the
5 assignment agreement. And is this a copy.
6 Yeah, she sent me the assignment. I said okay,
7 let me see what I signed. I sure don't have a
8 copy of it.

9 BY MS. COLUMBIA:

10 Q. Okay. Did she say in this conversation on
11 May 28th what sort of participation she was looking
12 for?

13 A. Yes.

14 Q. And what did she tell you about that?

15 A. She asked me to be a consultant.

16 Q. And did she tell you what that would
17 entail?

18 A. Generally.

19 Q. What did she say?

20 A. You know, it would take some time to review
21 things, possibly a deposition.

22 Q. Okay.

23 A. Well, actually, she didn't -- the
24 deposition was -- I asked her how much time would

1 this whole thing take of mine and she was saying,
2 well, because of this, you know (indicating), I
3 probably would be deposed, but that was going to
4 happen whether or not I was a consultant. So she
5 asked me if I could be a consultant for ScanSoft.

6 Q. Okay. And did you, in fact, agree to be a
7 consultant for ScanSoft in connection with the
8 litigation?

9 A. Yes.

10 Q. And did you reach an agreement by which
11 you'd be paid to be a consultant for ScanSoft?

12 A. Yes.

13 Q. And are you currently being paid as a
14 consultant for ScanSoft?

15 A. Yes.

16 Q. And at what rate?

17 A. \$250 an hour for, you know, on-site time or
18 direct time, and then 40 percent discount off of
19 that if I had to travel.

20 Q. Okay. And what -- I don't want to know the
21 substance of what you've done as a consultant. But
22 what types of tasks have you been asked to do? So
23 don't tell me -- generically, I'm interested in the
24 types of tasks you've conducted as a consultant for

1 ScanSoft, but not in the substance of what you've
2 performed in those tasks.

3 A. I'm kind of characterizing what we did that
4 led up to the patent, much as if I --

5 MR. ASHER: I think -- excuse me. But to
6 the extent you're going to explain the substance
7 of your discussions with the attorneys who had
8 retained you as a consultant, that's protected
9 by attorney work product privilege and I'd ask
10 you not to reveal that. I think the question
11 just asks more generally whether you can
12 characterize generally what --

13 BY MS. COLUMBIA:

14 Q. For example, were you asked to review the
15 family of patents that we've marked as Exhibits 1
16 through 4?

17 A. No.

18 Q. Were you asked to review the patent in
19 suit, the 966 patent?

20 A. Yes.

21 Q. Have you been asked, don't tell me what the
22 answer was, but have you been asked?

23 A. Okay.

24 Q. Have you been asked whether in your opinion

1 the Voice Signal Technology's voice recognition
2 product infringes the 966 patent?

3 MR. ASHER: Objection. I'm going to
4 instruct you not to answer. That's privileged.
5 You're trying to find out what we said to him.

6 MS. COLUMBIA: Well, I think he can answer
7 that yes or no.

8 MR. ASHER: He might be able to answer it
9 yes or no. But you're trying to put words in
10 his attorney's mouth and find out -- you can go
11 through a number of scenarios of what we asked
12 him with yes or no questions. You're still
13 trying to find out what the attorneys had said
14 to him.

15 BY MS. COLUMBIA:

16 Q. Have you, in connection with your
17 engagement as a consultant, had any access to Voice
18 Signal Technology's documents that describe their
19 technology?

20 A. No.

21 Q. Do you expect to be present in Boston,
22 Massachusetts to testify as a witness in the trial
23 in this case?

24 A. I have no expectations.

1 Q. So it's not part of your consulting
2 agreement that you will appear for trial?

3 A. No. No.

4 Q. Have you prepared any sort of report as a
5 result of your consulting activities for ScanSoft,
6 written report?

7 A. No.

8 Q. You testified I think, very early on in the
9 day about a process that you went through at Voice
10 Control. I don't think you gave a date, but it was
11 a process of getting together with a patent
12 attorney. I think you said it was Mr. Judson. His
13 educating you a bit about the patent process and
14 looking at the technology that had been developed at
15 Voice Control Systems and making some determinations
16 about what of that technology should be patented,
17 could be patented, et cetera. Understanding those
18 aren't your exact words, is that a fair
19 characterization?

20 A. That's a generalization, yes.

21 Q. Do you remember when you initiated that
22 process, when Voice Control Systems initiated that
23 process?

24 A. No.

1 Q. Do you remember what triggered it?

2 A. Yeah. It was triggered by me believing we
3 were going to get somewhere marketing to the
4 wireless folks. In other words, that there was
5 going to be a product out there that was generally
6 known. And knowing where we are and what we had to
7 do to get there, I wanted some way to protect it.

8 And it was difficult to protect it under
9 any other intellectual property protection. And we
10 reluctantly -- or we had -- my strategy and I was
11 the chief IT strategist, along with everything else.

12 Q. Among your many hats.

13 A. Yeah. Was okay, as a last resort, let's
14 patent it. So I remembered Judson from some other
15 time and knew that he actually had done some speech
16 patents. So I said well, at least we won't have to
17 train him. And found out where he was and brought
18 him in.

19 Q. And when you say -- I think you said it was
20 triggered by you were going to get somewhere in the
21 market with the wireless folk, is that --

22 A. Service providers.

23 Q. The wireless service providers?

24 A. Uh-huh.

1 that was attached or inside the NEC phone. You had
2 built a voice dialer for the Italtel phone and for
3 the Uniden phone.

4 What were the application challenges
5 specific to moving, I don't want to say moving
6 because that's probably wrong, but to having the
7 voice dialer at the central switch as opposed to in
8 the handset, which you had done to date?

9 MR. ASHER: Objection.

10 BY MS. COLUMBIA:

11 Q. Well, let me ask, were there challenges
12 associated with voice dialing application at the
13 central switch that were not present in the voice
14 dialing application in the handset or in the
15 cellular phone?

16 A. I'd express it in a different way.

17 Q. Okay.

18 A. There was more to do and more you could do
19 and that's the key.

20 Q. Okay.

21 A. You didn't see tens of thousands of these
22 NEC phones running around. And they didn't meet the
23 fundamental problem. They were a nice algorithm
24 implementation and the application was terrible.

1 People didn't use them. Because of the ability to
2 put it centrally, as opposed to having to replicate
3 the hardware everywhere, you were afforded a cost
4 savings per user that you couldn't even begin to
5 approach in a phone.

6 So we had failed at -- I mean, you know,
7 the thing recognizes digits, big deal. Nobody used
8 it. It was a pain in the rear end. The only people
9 who used it was somebody trying to impress somebody.
10 It wasn't safer because people didn't use it.

11 Once we got into being able to make it a
12 piece of the switch or of the network, you could
13 spend lots of money on hardware because it got
14 distributed across tens of thousands of customers.
15 So we were able to now really develop something
16 people could use from a cost perspective, which then
17 led to the challenges. Okay?

18 Q. Okay.

19 A. Things like, how did you deal -- how do you
20 effectively deal with noise. And I don't mean
21 steady state noise. I mean, somebody tooting the
22 horn, PJ in the back seat saying, dad, in the middle
23 of me trying to talk to the thing, windshield wipers
24 being turned on, the radio going a little too loud;

1 I mean that's just one class of things.

2 Another class of things are the timeouts.

3 You couldn't have the -- most people in those days
4 were trying to do speech recognition with a digital
5 signal processor, which is an expensive class of
6 computer, very expensive, even more expensive in
7 terms of its memory system. We had to deal with, I
8 think it was an Intel 8088 -- which was basically a
9 piece, an early, very early PC chip kind of thing --
10 because of the cost.

11 I mean, even then, phones were being given
12 away. People wouldn't spend any more for a
13 peripheral to a phone, even to save their lives,
14 until afterwards. I mean, it's just like today.
15 You go sign up for cellular service, you get a phone
16 for free or something like that. And these things
17 were coming in at \$300 retail. You know, that was
18 insane. So nobody -- didn't take off. It was a
19 failure as a commercial product. And as a speech
20 recognizer.

21 You didn't tell people this, but that's
22 what it was. So with -- we could used whatever
23 computer, we could have used a Cray if we wanted to
24 at the central office because the cost was

1 distributed across thousands of people.

2 So then that let us do things like
3 nonstatic timing. And what I mean by that is we had
4 to learn things about how people spoke digits in a
5 digit string and build intelligence around the
6 recognizer to interface with people -- you know,
7 it's a man machine interface -- which nobody knew
8 about, nobody had done.

9 We went out and finally bought a book about
10 how to interface it to -- how to interface this
11 intelligent peripheral to other parts, other
12 systems. And they had sort of Bell standards for
13 land lines and then we had to adapt those to the
14 wireless environment. There's timeout -- and
15 timeouts are a big one, believe it or not, for
16 regular phones. How long you can sit there and not
17 dial anything and the dial tone either stays there
18 or it goes away.

19 Well, it's like, I don't know what it is,
20 30 seconds. Well, you can't have an open microphone
21 for a speak recognizer for 30 seconds in a car;
22 sooner or later, the thing is going to think it
23 heard something, a bump in the road. And especially
24 then, when the technology was very fragile.

1 So we had to do all that. And that's, I
2 believe that's where most of the intelligence is in
3 these things, not in the speech recognition
4 algorithm.

5 Q. Okay.

6 A. But getting it back, pulling it back to, it
7 wasn't so much challenges afforded by the wireless.
8 switch base, that's true, there were. You had
9 another piece. But that was more the recognizer
10 piece that was a challenge. Because you had other
11 perturbations in the voice, in the speech; but that
12 was small compared to everything else.

13 Q. The other things that hadn't been --

14 A. Well, that would make a successful dialer.

15 Q. Okay. Going back to the voice dialers that
16 were developed for NEC, Uniden, the ones that were
17 hardware and software that were either inside the
18 handset or attached to the handset. What, if you
19 recall, from the user's perspective, what was the
20 functionality, what could it do for me? I heard
21 what you said about maybe it didn't do it as well as
22 I'd like, but when you -- what could it do for me?

23 A. Well, it varied from one to another.

24 Q. Are you able to distinguish in your mind,

1 if I ask you about the NEC model, can you tell me
2 what its functionality was and then we'll go through
3 the others?

4 A. I think it was similar to the Uniden one,
5 very similar to Uniden.

6 Q. So if I have the users manual from the
7 Uniden one, it's fair to assume that its
8 functionality from a user's perspective was the same
9 or very similar to the others?

10 A. I think that's fair.

11 Q. Okay. In terms of the functionality, that
12 is, what a user could do with it, not how well it
13 worked, but what I could do with it, is there any
14 difference between what I'll call the handset
15 models, the ones that were built early on for NEC
16 and Uniden and so forth, and the central switch
17 model? Obviously, it's located in a different
18 place, but in terms of what I can expect it to do
19 for me, was there any difference?

20 A. Yeah.

21 MR. ASHER: Objection.

22 THE DEPONENT: Oh, sorry.

23 BY MS. COLUMBIA:

24 Q. What were the differences in functionality?

1 recognition type intelligence, as opposed to any
2 kind of peripheral intelligence, mainly because of
3 cost, you know, the processor wouldn't support it
4 because we didn't -- well, we couldn't, for price
5 reasons, use anything more than the 8088. And the
6 memory systems, memory was more expensive than
7 processors these days and every line of code you
8 fought them.

9 Q. Okay.

10 A. I mean, there was arguments. The 8088 was,
11 I think it was a 16-bit bus, but the Japanese were
12 using 4-bit buses for their controllers. And they
13 thought we were absolutely insane.

14 So this was just a recognizer, these early
15 ones basically was just a recognizer and implemented
16 hardware and didn't work very well. When I say it
17 didn't work very well, it didn't really do the job.
18 You know, trying to dial by digits was painful; even
19 I didn't do it and I was the president of the
20 company. And it pained me. I hated to demonstrate
21 it.

22 Q. So it was architected to receive a command
23 and then to receive digits, but you're saying it
24 didn't work very well to do that?

1 A. Right.

2 Q. Because it didn't have the other
3 peripheral?

4 A. Yeah. We didn't have enough to work with.

5 Q. Okay.

6 A. I'm a big Thomas Edison fan because I was
7 born in West Orange, but it's kind of like having a
8 light bulb that didn't light. You know, you could
9 call it a light bulb, but if it didn't light, what
10 good was it. And we had a voice dialer that didn't
11 dial by voice.

12 Q. So there was speech recognition software in
13 the system?

14 A. Yeah.

15 Q. That was set up to receive a command to
16 dial digits, correct?

17 A. Yes.

18 Q. And the voice recognition software was set
19 up to collect those digits when you spoke them and
20 then to cause those digits to be dialed, correct?

21 A. Yes.

22 Q. And similarly, it had, it was set up to
23 receive a command to dial a key word or by memory
24 using a two digit code, correct?

1 A. Yes.

2 Q. And it was set up to be able to recognize
3 that key word or that two digit code, associate it
4 with a telephone number and cause the phone to dial
5 that number, correct?

6 A. Yes.

7 Q. Okay. And that was true of all these early
8 -- well, at least the Uniden system?

9 A. And the NEC system, as well, because it was
10 -- this was based on that.

11 Q. You've already said they were essentially
12 the same.

13 A. Yeah.

14 Q. So I understand that in practice, it didn't
15 work very well and maybe not at all; but it was --
16 all of the software was there to perform those
17 tasks, correct?

18 A. Yes.

19 Q. Okay. So looking at that, and if you can
20 for a moment, focusing not so much on whether it
21 worked well or didn't work well, tell me if there's
22 any other difference in, when I say functionality,
23 things I could do with it. So with the Uniden
24 system, I could dial digits by giving a command or I

1 could dial a memory code and associate it with a
2 number by giving it a command or I could dial using
3 a key word.

4 I think you've already told me that in the
5 central switch system an added feature was that I
6 could, through speaker dependence, I could -- well,
7 you didn't say -- you just said it had speaker
8 dependent voice recognition. So what did that add
9 from the user's perspective; what could I do with
10 that?

11 A. Make your own words. You could record
12 Peter Foster, instead of friend one or instead of
13 representing Peter Foster by memory 02.

14 Q. So that's a difference in terms of the
15 options available to the user. Was there anything
16 else by move -- in the central switch version, let
17 me say it that way?

18 A. Well, there was this whole human interface
19 that wasn't here.

20 Q. What do you mean by that?

21 A. The human factors' software that made it an
22 application as opposed to a digit recognizer.

23 Q. Okay.

24 A. You know --